PERSONNEL STUDIES of MESSENGERS in the WESTERN UNION TELEGRAPH COMPANY

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WITH A VIEW TO DISCOVERING FACTS WHICH WILL GUIDE THE COMPANY IN THE DEVELOPMENT OF ITS MESSENGER PROGRAM

By

IRA MITCHELL DREESE

L. C.

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY IN THE FACULTY OF PHILOSOPHY
COLUMBIA UNIVERSITY

New York City
1929

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I. M. D.

CONTENTS

CHAPTER PAGE

PART I

A CRITICAL SURVEY OF THE PRESENT EMPLOYMENT STATUS OF MESSENGERS

INTRODUCTION 1

I Length of Service of Messengers 3

II Cost of Messenger Turnover 15

III Reasons for Leaving as Given by Messengers 20

IV The Present System of Selection 24

PART II

RELATION BETWEEN CRITERIA OF SUCCESS AS A MESSENGER AND FACTORS AFFECTING A MESSENGER'S EFFICIENCY

V Criteria of Success as a Messenger 27

VI Relation between Length of Employment and Factors Affecting this Period of Service 31

VII Quality of Service and Factors Affecting the Efficiency of the Messenger 50

VIII Summary and Conclusions 57

INTRODUCTION

The Western Union Telegraph Company, with its army of 15,000 messengers scattered throughout the nation, is one of the largest employers of juvenile labor in the United States. In the Metropolitan Division alone, composed of Greater New York and Long Island, there are more than 2,000 khaki clad lads handling 33,000,000 messages in the course of one year. Since the average length of service of the messenger is very short, the actual number of boys hired in New York City is annually between 6,000 and 8,000.

Two-thirds of this number or approximately 5,000 boys are enrolled yearly in the company's continuation school. This school although closely associated with the New York City Continuation School System, is directly under the supervision of the Western Union. Personnel policies concerning messengers, therefore, affect not only a messenger's working day but also his training in school.

The company is of the opinion that any personnel program, involving such a large number of workers, should be based upon all the pertinent facts obtainable. Such important questions of policy as these are continually arising: Should the younger or the older boy be favored in the selection of messengers? Is it advisable to select certain nationalities rather than others? Should the employment department establish a minimum intelligence standard for messenger work and reject all applicants falling below this point? Is it advisable to favor the boy who has just left school or the one who has had considerable working experience? What kind of vocational guidance can the continuation school give most effectively?

The answers to these and many questions of policy can be given only on the basis of facts revealed by studies of messengers. The writer, in co-operation with Mr. Eric Nicol, Personnel Manager of the Metropolitan Division of the company, undertook a personnel study of messengers with a view to discovering facts which

would guide the company in the development of its personnel program.

This study is divided into two parts: (1) a critical survey of the present employment status of messengers and (2) an investigation of the relationships between criteria of success as a messenger and such factors as age, education, intelligence, nationality, number of dependents and previous working experience.

PART I

A CRITICAL SURVEY OF THE PRESENT EMPLOYMENT STATUS OF MESSENGERS

CHAPTER I

LENGTH OF SERVICE OF MESSENGERS

Rapid Turnover of Juvenile Workers

Employers of juvenile labor face the problem of continually hiring new recruits to fill the gaps left by those who resign after giving a very short period of service. Youth with its restlessness and freedom from economic responsibility is a continuous period of vocational try-outs. The juvenile employee who so gayly accepts the position today is likely to tire of it within a short time and move on to what seem to him more promising fields.

Burdge, in his study of 245,000 employed boys in New York State, found that 40 per cent of them had worked less than four and a half months on their last job and that 60 per cent had given a period of service of less than seven and a half months. (Burdge, H. G., *Our Boys;* Lyon Company, Albany.) He also discovered that only 10 per cent of these boys had been in their present position for one year or more.

A recent bulletin issued by the New York State Department of Labor states, "Within an average work period of nine months, the 412 children had held 818 jobs or approximately two each. Over one-fourth of the young workers had held two jobs, 17 per cent had had three and 11 per cent had held four or more positions." (*Special Bulletin* No. 134, New York State Department of Labor.)

Dr. Anna Y. Reed, in surveying the waste involved in this heavy turnover, concludes: At present, such evidence as is available shows that approximately 10 to 15 per cent of the junior workers are continuously unemployed while changing jobs." (Reed, A. Y., *Human Waste in Education,* p. 45; Century Company.)

It is not strange, therefore, that the period of service of the Western Union messenger is very short. It was generally recognized by personnel officials that the typical messenger did not stay with the company for a very long period but there was lack of available data as to the average length of service. For this reason, it was deemed advisable at the very beginning of this study to determine the mean length of employment of all the various classifications of messengers.

Classes of Western Union Messengers

Such an inquiry is complicated by the fact that there are nine distinct classes of messengers, determined by sex, age and hours of employment. Following are the various classifications in order of size.

TABLE I

Number of Western Union Messengers of Various Classes
(November 10, 1928)

	Classification	*Period of Work*	*Messengers Employed* *Number*	*Per Cent*
1	Full Time Day—Male	8 A.M.- 5 P.M.	1183	59
2	Sat. and Sun.—Male	Sat. and Sun. Only	264	13
3	Part Time Evening—Male	5 P.M.-10 P.M.	240	12
4	Early Night	4 P.M.-12 P.M.	163	8
5	Part Time Day—Male	8 A.M.-11 A.M.	55	3
6	Part Time Day—Female	11 A.M.- 2 P.M.	18	1
7	Full Time Day—Female	9 A.M.- 6 P.M.	48	2
8	Late Night—Male	10 P.M.- 6 A.M.	22	1
9	Motor	Any Hours	22	1
	Total		2015	100

The length of service of these classes of messengers was computed in terms of three indices:

1. Monthly per cent of turnover for the complete force over a period of ten years.

2. Average length of service of messengers released during a period of six months.

3. Average length of service of all messengers on the force on November 10, 1928.

1. Per Cent of Turnover During the Past Ten Years

Data were collected from the files of the Personnel Manager and from the records of the Dispatcher's Office, which showed the monthly per cent of turnover for the period between 1919 and 1928 inclusive. By per cent of turnover is meant the number of messengers released in the course of a month divided by the number of messengers on the force at the end of the month.* It had been the practice for a number of years, to average the force enrollments at the end of each week to obtain the monthly enrollment, but it was found that this figure so closely approximated that computed from the last day's enrollment alone, that the plan was discarded.

TABLE II

Per Cent of Turnover by Months 1919-1928

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Per Cent	Per Cent
1919	..	..	29	28	25	33	24	27	41	46	36	29	*	34
1920	36	37	37	35	34	32	31	39	42	42	24	18	420	35
1921	13	16	24	21	22	29	25	20	42	27	23	22	288	24
1922	35	29	32	37	62	62	58	87	31	67	61	49	720	60
1923	53	42	42	36	39	49	42	36	43	43	40	32	492	41
1924	43	34	37	36	38	43	40	29	39	31	29	23	420	35
1925	34	25	26	21	23	30	21	20	31	25	24	19	288	24
1926	29	27	24	23	22	23	29	19	29	22	21	15	276	23
1927	27	22	28	22	26	23	22	22	40	27	25	18	312	26
1928	29	26	21	21	25	24	19	19	32	26	21	20	276	23
Average	32	29	30	28	31	35	31	30	46	35	28	24	388	

*(Averages and total were computed from original data.)

From Table II it is obvious that the number of messengers leaving the force, in proportion to the number enrolled, is quite large.

*The policy of the company has been to compute its turnover by the method recommended by the U. S. Bureau of Labor Statistics, namely, in terms of the number of workers released. It should be admitted that in some cases labor turnover is figured in terms of the number of employees hired. This method is recommended only when the force is being diminished. Such a situation has not occurred in the Western Union, since its force has been growing continuously. Therefore, number of workers released is a proper basis for computing messenger turnover.—(Slichter, S. H., *The Turnover of Factory Labor*, D. Appleton & Company, 1919.)

On the average during the past ten years, almost one third of the total enrollment has left monthly. In other words, the number of messengers released in the course of one year has been approximately four times the number required on the force at any one time. The significance of this is seen more clearly when stated in actual numbers. In 1928 there was an average enrollment of 1850 carriers and a turnover index of 283, which means that approximately 5,200 messengers were released during that year.

Although the annual per cent of turnover has fluctuated somewhat during the last decade, it has shown a tendency to decrease. During the past four years, however, it has remained stationary.

Monthly Fluctuations in Turnover

One of the most significant facts revealed by Table II is the monthly fluctuation of turnover. The monthly turnover in each year follows a rather definite pattern with the same high and low spots occurring year after year. This is shown in Figure I.

In January, June, September and October, the number who leave is usually large, while in February, March, April and December the number is comparatively small. In all probability, a great many factors contribute to this yearly cyclical character. In September many releases result from resignation by boys who probably resign to return to school. The boys who are hired to take the places of the September drop-outs give the short period of service characteristic of newly hired messengers and may be the reason that the following month, October, has a large turnover rate, (See Table III). In December the Christmas rush causes the messenger business to boom and most of the boys are making good money, both by their commissions and tips. Moreover, boys are probably hesitant to go on a vacation just before Christmas when they are in need of money for the holidays. It is not surprising that the December rate of turnover is lower than that of any other month. In January the number of messengers leaving is large. Probably many boys who worked merely to have money for Christmas resign now that they no longer have that incentive. February and March have a relatively small rate of turnover, possibly because a large number of recent public school graduates are looking for employment and competition is keen. The observed increase in rate of turnover in May and June might be explained

by the fact that outside work is opening up and many boys probably resign to take work of a seasonal nature. Possibly too, the restlessness of the spring season comes upon them and they decide to embark upon a vocational exploration. During the summer

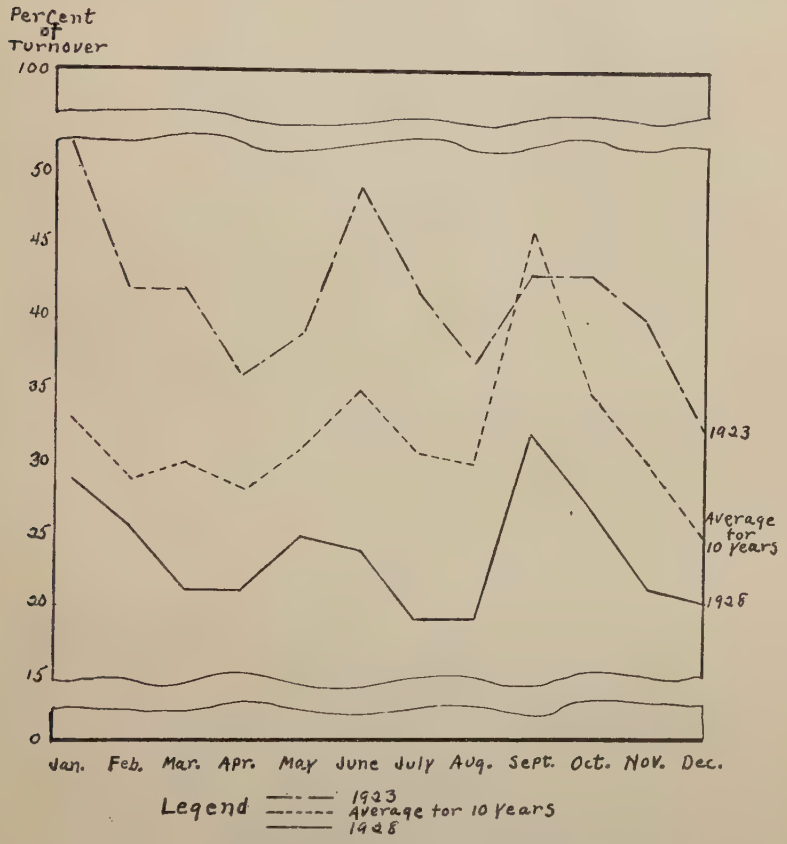

FIG. I. GRAPH SHOWING MONTHLY TURNOVER

months the army of school boys available for work causes a certain amount of stability on the part of those who have jobs.

From a pragmatic point of view, a knowledge of this monthly cycle is of value regardless of its cause. If the employment department is able to predict when the number of messengers leaving will be large, it can prepare for it in various ways. It can build up a reserve force and advertise extensively for carriers just before the expected shortage is due to occur. It might also make

an extra effort to hold the messengers it already has by warning the local managers that a serious shortage is expected and urging them to adjust any difficulties which might cause resignations to develop.

2. Average Length of Service of Messengers Released During A Period of Six Months

It is particularly important to know the average length of service of the carriers released over a considerable period of time. Is the company losing the veteran or the raw recruit? To obtain some light on this question, an investigation was made of the service given by all the messengers released during September and October, 1928. By the end of November, it was decided that since most of the future studies were to deal primarily with the full time day messenger only, it would be advisable to study his period of employment apart from the other classes of messengers. The data for November, December, January and February deal only with this class. The length of time spent in the service of the Western Union by these released carriers may be seen in Tables III and IV.

TABLE III

Number of Released Western Union Messengers Who Have Worked a Given Period of Time—September and October, 1928

(All Classes)

Length of Service	*Sept.*	*Oct.*	*Total Number*	*Total Per Cent*	*Accumulative Per Cent*
1 week (or less).....	78	154	232	23	23
2 weeks	37	93	130	13	36
3 weeks	33	39	72	7	43
4 weeks	32	31	63	6	49
2 months	98	40	138	13	62
3 months	97	17	114	11	73
3-6 months	99	40	139	13	86
6-9 months	43	37	80	8	94
9-12 months	27	9	36	4	98
Over one year.....	26	6	32	2	100
Total.....	570	466	1036	100	

TABLE IV

NUMBER OF RELEASED MESSENGERS (Full-Time Day Males Only) WHO HAVE WORKED A GIVEN PERIOD OF TIME—NOV., 1928-FEB., 1929

Length of Service	*Nov.*	*Dec.*	*Jan.*	*Feb.*	*Total Number*	*Per Cent*	*Accumulative Per Cent*
1 week (or less)..	53	39	44	59	195	16	16
2 weeks	44	46	51	72	213	18	34
3 weeks	30	20	24	53	127	11	45
4 weeks	16	28	29	43	116	10	55
2 months	44	66	60	44	184	15	70
3 months	17	16	35	32	100	8	78
3-6 months	29	45	32	44	150	12	90
6-9 months	12	11	12	14	49	4	94
9-12 months	2	16	9	3	30	3	97
Over one year.....10		14	10	2	36	3	100
Total.....	257	271	306	366	1200	100	

From the data in Tables III and IV we can see that the messengers who are dropping out most rapidly are those who have been in the employ of the company for a very short period of time. Fifteen per cent of the boys who left the employ of the Western Union have given a period of service of less than one week; 50 per cent have been on the roll for less than a month; 75 per cent of the drop-outs have worked less than three months and less than five per cent have been on the force for a period of one year.

This is true of both the group as a whole and of the full time day messengers when studied separately. With the exception of the per cents in the first eight weeks of service under the September and October columns, the figures for the various months show a striking similarity. This discrepancy in September and October is probably explained by the fact that many boys dropped out in September who had been working during their summer vacations and this had a tendency to raise the period of service given by the drop-outs during that month. Then in October, the recruits who took the places of the many boys released in September, gave the usual short period of service.

3. Average Length of Service of All Messengers on the Roll on November 10, 1928

The extremely short period of service given by the released carriers gave rise to the question why the annual per cent of turnover was not higher than 400 per cent on the average. It was decided to study the length of service of all the messengers in the Metropolitan Division as an aid in interpreting the data in Table II. On November 10, 1928, the date of employment of the 2015 messengers then enrolled was secured from their registration cards and their length of service to date was computed. This was done for each class of messengers separately. To facilitate handling the data, the period of service was stated first in terms of years and then that of the first year was broken into units of weeks and months.

TABLE V

Number of All Western Union Messengers of the Metropolitan Division Who Have Served a Given Number of Years

(November 10, 1928)

Years	*Full Time Day Males*	*Sat. and Sun. Boys*	*Part-Time Evening Boys*	*Early Night Men*	*Part-Time Day Males*	*Full-Time Day Females*	*Late Night Men*	*Part-Time Day Motor*	*Part-Time Day Females*	*Total Number*	*Total Per Cent*
1	920	220	217	94	46	30	10	16	12	1565	78
2	157	33	15	18	7	11	0	4	6	251	12
3	40	9	6	11	1	3	1	0	0	71	2
4	19	2	0	6	0	2	2	1	0	32	2
5	10	0	2	10	0	1	2	0	0	25	1
5-10 ...	22	0	0	14	1	1	5	1	0	44	2
Over 10	15	0	0	10	0	0	2	0	0	27	1
Total..	1183	264	240	163	55	48	22	22	18	2015	100

This study of the length of service of all the carriers on the force, as shown in Tables V and VI, explains why the annual per cent of turnover is not greater, with the newly hired employees leaving so rapidly. There is a more or less stable group or nucleus around which the force is built. Some selective factor operating over a period of time has built up a group whose relative length of service is high and this keeps down the turnover for the group as a whole. Of the released messengers, only five per cent have been in the service for more than one year, while of the carriers still working for the company, 22 per cent have served more than

TABLE VI

NUMBER OF ALL WESTERN UNION MESSENGERS OF THE METROPOLITAN DIVISION WHO HAVE SERVED A GIVEN PERIOD OF LESS THAN ONE YEAR

(November 10, 1928)

Weeks	*Full Time Day Males*	*Sat. and Sun. Boys*	*Part-Time Evening Boys*	*Early Night Men*	*Part-Time Day Males*	*Full-Time Day Females*	*Late Night Men*	*Motor*	*Part-Time Day Females*	*Total Number*	*Per Cent*
1	64	8	20	5	2	0	0	1	0	100	5
2	55	6	13	3	3	1	0	0	2	83	4
3	72	6	26	8	7	2	1	0	1	123	6
4	59	1	16	3	5	0	0	0	0	84	4
5	32	14	17	2	6	2	0	1	2	76	4
6	43	40	23	4	5	1	1	0	3	120	6
7	40	11	22	8	0	0	1	0	1	83	4
8	46	0	13	5	3	8	1	1	1	78	4
9	29	8	5	0	3	0	0	2	0	47	2
10	18	9	1	3	3	1	1	1	0	37	0
11	14	14	5	4	0	0	1	1	0	49	2
12	17	6	2	1	2	1	1	0	0	30	2
13	17	10	1	1	1	0	0	1	0	31	2
Month .	63	27	3								
4	63	27	3	11	1	1	0	0	0	107	5
5	83	8	6	8	0	5	1	2	1	113	6
6	148	14	10	7	1	2	0	1	0	81	4
6-9 ...	104	22	17	12	2	6	1	4	1	171	8
9-12 ..	115	16	17	9	2	0	1	1	0	162	8
Total..	920	220	27	94	46	30	10	16	12	1565	78

twelve months. Of the ex-messengers, only 50 per cent had worked more than a month, while of the messengers on the force, 81 per cent had already worked longer than that period.

An annual turnover of 400 per cent means that in the course of three months, the number of employees leaving is equal to the total enrollment at any one time. Table VI shows, however, that 54 per cent of the messenger force has been enrolled for more than three months. This indicates how rapid must be the influx and exit of the newly hired carriers.

COMPARISON OF THE LENGTHS OF SERVICE GIVEN BY THE VARIOUS CLASSES OF MESSENGERS

The necessity of a very careful analysis of turnover figures is shown by Table V. It is apparent that the average length of service of the various classes of messengers is not the same. The night men, of whom 44 per cent have been in the service for more

than one year, show a tendency to remain longer than any other group. These men are over 21 and most of them probably regard the position of messenger as a permanent position. Next in order of length of service come the female messengers, of whom 36 per cent have been in the service for more than one year. Then come the full time day messengers who constitute the bulk of the force. The proportion of this group in the service for more than twelve months is 23 per cent, or practically the same as the proportion of the total force remaining for that period of time. The part time day males, the part time evening boys and the Saturday and Sunday groups all serve a relatively short length of time. Taking the three groups together, the proportion that has worked for more than one year is only 14 per cent.

In analyzing by units of weeks, the periods of service of messengers who had been on the force for less than one year, it was found that the relative duration of service of the various classes is about the same as those computed in yearly units. Those classes of carriers which have a comparatively large number on the force for more than one year have a relatively large proportion that has served for more than six months. Conversely, those classes which have few of their number enrolled for more than one year have a small per cent with the company for more than six months.

Seventy-six per cent of the part time evening boys and 67 per cent of the Saturday and Sunday messengers have been in the service for less than six months. Evidently these two groups, which are composed mostly of school boys, do not give a very long period of service.

Force Requirements and Number of Applicants

It is interesting to observe the relationship existing between the number of messengers required on the force and the number of applicants. To what extent do both vary? Do more boys apply when the force is large or when it is small?

The average monthly force requirements during the past three years and the average number of boys seeking positions as messengers are shown in Table VII.

By force requirement is meant the total number of messengers that should be on the roll in order to supply the local offices with

all the carriers that they really need. The term *applicant* as used in Table VII refers only to boys making their first inquiry about work and does not include the second visits of a considerable number who return after a temporary rejection.

TABLE VII

AVERAGE MONTHLY FORCE REQUIREMENTS AND AVERAGE MONTHLY NUMBER OF APPLICANTS 1926, 1927 AND 1928

Months	*Average Force Requirement*	*Average Number of Applicants*
January	1727	2495
February	1712	3685
March	1770	2299
April	1808	1565
May	1829	1773
June	1717	4216
July	1646	5921
August	1628	1998
September	1792	2764
October	1849	2639
November	1869	2199
December	1926	1968

From Table VII we can readily see that both the force requirements and the number of candidates for messenger positions vary throughout the year. During October, November and December the number of messengers required is larger than during other months. Evidently the volume of business handled by the company is greatest at this time. During July and August, the force requirement is approximately 200 less.

The number of applicants varies even more. In July, when the school boys are looking for employment, the number of applicants is almost 6,000 while in April, it is only 1,500. In February, the end of the school mid-year, the number of boys seeking positions is again large, slightly over 3,500.

Does the increase in the number of applicants occur at a time when a large messenger force is required? Even a superficial analysis of Table VII shows that this is not the case. In December, when the number of applicants is small, the force is at its maximum size. In July, when the number of boys asking for work is at its height, the force requirement is at its lowest ebb.

Summary

During the decade, 1919-28, the rate of turnover was almost 400 per cent annually. In other words, almost one-third of the total enrollment left monthly. The monthly turnover in each year followed a rather definite pattern, with the same high and low spots occurring year after year.

Of the messengers who were released over a six months period, 15 per cent had given a period of service of less than one week; 50 per cent had been in the employ of the company less than a month; 75 per cent less than three months; while less than five per cent had been on the force more than one year.

In studying the length of service of all the messengers on the force on November 10, 1928, it was found that 19 per cent had served less than a month; 47 per cent less than three months and 22 per cent more than one year. The full time day boys had been in the service a longer period than the part time evening and Saturday and Sunday messengers.

Both the size of the messenger force and the number of applicants for positions varied in the course of a year. In general, more boys applied for work when the volume of business transacted by the company was small.

CHAPTER II

COST OF MESSENGER TURNOVER

Messenger, A Juvenile Occupation

Inasmuch as the position of messenger is a juvenile occupation, it is natural that the company should have developed an appropriate point of view. In contrast with most business concerns, it does not wish its employees to remain in the service indefinitely. In fact the personnel department makes no effort to keep a boy longer than six months but rather endeavors to promote him or place him with some other firm that offers more opportunities for advancement.

This novel policy is not based primarily upon altruism, but upon a desire to attract boys of a high type into messenger work. In a city like New York where employers everywhere are bidding for the services of the superior boys, an industrial concern must offer some inducement which will appeal to boys of a high calibre. The Western Union personnel officials responsible for initiating this policy believe that many an intelligent boy, who would not for a moment consider the occupation of messenger as a permanent career, would be willing to serve as a messenger for a six months period as a means of learning something about the business world which would guide him in the selection of a permanent position.

Optimum Length of Service

Just what should be the limits of an optimum length of employment as a messenger is a very perplexing question. At the time of this investigation, the personnel management was unable to definitely define a desirable length of service. It had tentatively established a length of service of less than three months as undesirable and and a length of much more than one year as questionable.

Promotions

The company is quite desirous of rewarding boys who have served an optimum period by promoting them within the company. Such openings are not very numerous. Of the 6,000 boys in the employ during 1928, only 104 were promoted to other posts with the Western Union.

Placement with Other Firms

The personnel management is cognizant that few messengers can be promoted within the company and is developing a plan to place these boys elsewhere. For some time the company has been establishing contacts with business men throughout the city who come to the personnel department when they have openings for promising boys. Personnel officials then recommend to them messengers of proven character and ability. This arrangement has been so satisfactory to both employers and to the company that the Western Union is now organizing a program to carry out this plan on a larger scale.

Effect on Attitude Toward Turnover

In considering messenger turnover, the above employment policy must be kept in mind. The company is not greatly concerned about the loss of the 25 per cent of released carriers who have given more than three months of service. (See Tables III and IV.) The personnel department would prefer that they stayed with the company six months, but is fairly well satisfied with a stay of half that length. Those who stay less than three months, however, are a cause of grave concern. Tables III and IV show that 75 per cent of all messengers released over a period of six months fall into this class

This extremely short period of employment is deplored for various reasons. From the viewpoint of the messengers' welfare it is felt that those who drop out too early lose the opportunity to profit from the vocational guidance which the Western Union is in a position to offer them. The personnel department does not know enough about a messenger to recommend him for another position unless he has been with the company for at least several

months. The great disadvantage from the standpoint of the company is the high cost of turnover.

Difficulty of Measuring Cost of Turnover

The complete cost of turnover probably can never fully be measured. The extent to which the morale of the force is affected by the rapid influx and departure of messengers is a matter of conjecture. Certain items of cost which more readily lend themselves to objective analysis have been studied and the results are stated in quantitative terms.

Cost of Hiring

Every time an applicant applies for work there is a certain amount of expense involved. The advertising which led him to apply, the application blank that he uses, and the time of the personnel force that he consumes all represent an expenditure on the part of the company. The cost of these items has been studied by the employment department for a number of years and it has been found that the average cost for each messenger hired amounts to approximately two dollars. This is not the whole cost, however, for the overhead of the building is not included. Nor does this include the expense involved in releasing a messenger at the expiration of his period of service.

Cost of First Week's Guarantee

The company recognizes that the first week of a messenger's service is largely a training period and that he probably will not earn enough money to make a fair wage on the piece rate basis. To protect the beginner the company guarantees all inexperienced full-time day males an hourly rate of 27¼ cents an hour during the first week. Although the recruit is given a guaranteed wage, the piece rate schedule is also in effect and if he makes more than his guarantee, he is paid all that he earns. After the first week, practically all boys go on a straight piece rate schedule.

The investigator experienced great difficulty in collecting information regarding the difference between the guaranteed wage and the amount actually earned during the first week. Only the full amount due the messenger usually appeared on the payroll, and it was impossible to find from this sheet how much the car-

rier actually earned. A study of the first week's earnings of 100 new boys was made from the records in the time keeping office, and it was found that the average loss per boy was eight cents an hour or approximately *three and a half dollars* for the period of a week. Only seven of the 100 boys earned more than the guarantee during the first week. This expense is one of the major costs of turnover.

Cost of Equipment

All messengers while on duty are required to wear a uniform provided by the company. (In time of emergency male adults are hired who are not required to wear the regulation suits, but these employees are discharged as soon as conditions permit.) As soon as a boy is hired he is sent to the tailor who outfits him for duty. It has been estimated that the time consumed in fitting a new boy is worth at least fifty cents. This extremely small figure is made possible only by the volume of work handled by the equipment department.

Cost of Orienting in Office

When a new boy arrives at a branch office he must be "broken in", as the branch managers say. Some one in the office must give him the necessary instructions about his work and see that he has enough knowledeg about the duties of a messenger to be entrusted with the delivery of a telegram. The following day he is sent to the "Entry Class" where all new boys are given a few hours of instruction. Even after this course, the local manager is responsible for seeing that the beginner acquires considerable information of a local nature. All this takes time and time represents money. Several of the branch managers have estimated the time thus consumed in giving these necessary instructions at at least fifty cents. This does not include the time spent in the "Entry Class". Probably this amount is entirely too small and more of the managers could profitably use more time in instructing and orienting new messengers.

The new messenger, after these preliminary instructions, is turned over to a veteran messenger and told to learn all he can from him. Most of the experienced boys seem to be quite willing to explain the work to the beginner but some of them complain

that they are held back by the new boy "tagging after". To the writer, who has observed messengers scooting through heavy traffic, this appears to be a justifiable complaint. The experienced boy receives no extra compensation for instructing beginners. However most of this instruction is given by sergeants who are on a higher wage schedule.

Summary

The Western Union realizes that the position of messenger is but a juvenile occupation and it has no desire to have a boy continue in it indefinitely. In fact, after six months of service an attempt is made to place all deserving boys in a better position, either with the company or with some other firm.

The personnel department regrets, however, the withdrawal of three-fourths of the messengers who are released, namely, those who have left before giving three months of service.

The complete cost of messenger turnover would be extremely difficult to measure. The extent to which the efficiency of the force is impaired by the rapid influx and exit of new recruits is a matter of conjecture. Certain items which readily lend themselves to study have been computed. The cost of hiring, including advertising and clerical help amounts to two dollars per messenger. The expenditure involved in issuing the uniform and giving the necessary instructions has been estimated at at least one dollar. The big loss, however, is the difference between the actual earnings of the first week and the guaranteed salary for that period. This loss, on the average, amounts to $3.50 per boy. The total measurable loss to the company for each boy released before giving a satisfactory period of service is at least $6.50.

During 1928, 5,186 carriers were released in the Metropolitan Division. Three-fourths of these, or 3,880, had given a period of service of less than three months. The cost of hiring these 3,880 messengers amounted to about $7,700. The expense of issuing their uniforms and teaching them their duties was at least $3,880. Approximately 65 per cent of these undesired resignations came from full time day boys who had been given a first week's guarantee. This meant a loss of about $8,700.

The total measurable loss involved in the early resignations of messengers during 1928 was, therefore, at least $20,000.

CHAPTER III

REASONS FOR LEAVING AS GIVEN BY MESSENGERS

"Cause" vs. "Reason" for Leaving

It is exceedingly difficult to discover the real reasons why an employee resigns his position. The reasons given by the worker are suggestive but not very dependable. The worker himself does not always realize the cause of his dissatisfaction with his present employment. The vague reply, "I don't like the work." is often a challenge to the skill of a psychoanalyst to determine the underlying cause of unrest. Even if the employee has a pretty definite grievance in mind which is causing him to resign, he is usually reluctant to state it. He hesitates to make his complaint audible for fear that he may offend or place himself in a position where he has to defend his statement. It is much easier to say "Another job", and let it go at that.

Source of Data

It is the practice in the Western Union to ask all released messengers their reasons for leaving the service. About 35 per cent of these carriers are questioned by the special interviewer and the rest by the local office managers. Those who are given the "exit interview" by the special interviewer are questioned very carefully and a special effort is made to secure a rather specific reply. These answers secured in the local offices and telephoned to headquarters are more likely to be of a general type, such as, "I don't like messenger work," or "I got another job." The reasons which come from the local offices are naturally free from specific complaints which would reflect upon those offices.

With a view to discovering clues of value in indicating why messengers become dissatisfied and leave the service, a study was made of the reasons for leaving given by all messengers released during September, 1928 and February, 1929, 556 in each month.

TABLE VIII

REASONS FOR LEAVING GIVEN BY WESTERN UNION MESSENGERS

Reason	*Number of Boys Giving Reasons All Classes of Messengers* Sept.	Feb.	*Total* Number	Per Cent
Had secured another position	200	149	349	32
Discharged for:				
Absence	89	70	159	15
Unsatisfactory work	20	36	46	4
	(109)	(96)	(205)	(19)
Dislike for messenger work:				
No specific reason	42	34	76	7
Not enough pay	11	28	39	3
Too much walking	10	20	30	3
Parents object	9	16	25	2
Uniform	1	8	9	1
Lack of opportunity	3	2	5	1
Trouble in office	5	6	11	1
Transfers	15	16	31	3
Location of work	2	6	8	1
	(88)	(136)	(184)	(22)
Work interferes with school	78	43	121	11
Poor health	17	33	50	4
Never reported for work	9	33	42	4
Moved from city	13	11	24	2
Working for relative	0	20	20	2
Working for Postal Telegraph Company	0	6	6	1
Promoted within company	7	4	11	1
Miscellaneous	35	25	60	6
Total	556	556	1112	100

"Backward" Looking Reasons Given to Special Interviewer by 200 F. T. Boys	*Number*	*Per Cent*
	7	4
	31	16
	19	10
	11	6
	5	2
	10	5
	24	12
	7	3
	6	3
	(120)	(61)
	12	6
	17	8
	..	..
	14	7
	11	5
	8	4
	..	..
	18	9
	200	100

REASONS FOR LEAVING

We can readily see from Table VI that at least half the reasons given are of such a vague, indefinite nature that they are of no value in determining why messengers resign. Fifty-eight per cent, classified under "another position," "discharged for absence,"

"dislike for messenger work," "no specific reason," and "never reported for work," given no clues as to the cause of resignation. Of the remaining 42 per cent, the most frequent reason given is some specific objection to messenger work. "Not enough pay" and "too much walking" lead the list but neither one is present to a very large extent. It is surprising that only one per cent of the boys who are leaving allege lack of opportunity.

"Discharge vs. Resignation"

Eighty-one per cent of all messengers released have of their own accord resigned from the service. Only four of the remaining 19 per cent, officially classed as discharged, properly belong in this category. The 15 per cent who are dropped for absence have practically already resigned. The reason for the release of these carriers is the reason which keeps them away from work and that unfortunately is unknown.

Causes of Discharge

The author found in the personnel files a study of 134 messengers discharged during the months of January, February and March, 1927, which shows the frequency of the various causes of discharge among messengers. They are as follows: insubordination—21%, undesirable—17%, collecting on paid message—12%, false references—9%, fighting—9%, unreliable—9%, delayed messages—6%, signing telegrams—4%, held out company funds—4%, destroyed telegrams for delivery—4%, overcharged—4%, and destroyed telegrams—1%. Further data on the relationship between discharge and various factors concerning the messenger may be found in Chapter VII.

Reasons for Leaving Obtained by Special Interview

To obtain some additional light on reasons for resignation, a study was made of 200 full-time day boys who had given to the special interviewer specific reasons for resigning. The cases were selected at random from those who had given specific replies to the question of why they were resigning as messengers and they are probably quite typical of boys of this class.

Dislike for some specific phase of messenger work accounts for 57 per cent of the number. As with the September and February groups "not enough money" and "too much walking" receive first complaints. It is interesting to note that 12 per cent of the group admitted to the special interviewer that they were leaving because of trouble in the local office, while practically none of the September and February released messengers gave this reason. It must be kept in mind that two-thirds of the reasons for leaving came directly from the local offices.

Summary

Since employees are often ignorant of their real reasons for resigning and are hesitant to state their grievances to their employer, the reasons for leaving given by messengers are but suggestive of the real causes. At least 50 per cent of the reasons for resigning are too general to be of value. Dislike for messenger work, with "not enough pay" and "too much walking" as the specific objection, predominate among the definite reasons for leaving. Only one per cent state lack of opportunity as a cause of resignation, but this motive may be prevelant among those who seek other work. Four per cent of the boys are discharged, with insubordination and general undesirability causing most of the releases. One per cent of the messengers who leave are promoted.

CHAPTER IV

THE PRESENT SYSTEM OF MESSENGER SELECTION

Preliminary Interview

All applicants for positions as messengers in the Metropolitan Division are required to apply at the local employment department. Here they are received in the reception room by the preliminary interviewer. They are asked to fill out an application blank which calls for data concerning their personal history, education and previous working experience. The interviewer carefully checks this application and any apparent discrepancy must be satisfactorily explained or the application is not considered. If a boy has worked for the company previously, his old record card is carefully examined.

A sheet containing information about messenger work is given to the boys and any additional information desired is furnished by the interviewer.

The preliminary interviewer rates in code on the application blank any unfavorable item concerning the candidate which he wishes brought to the attention of the employment selectors. He may notice that the person seeking employment is blind in one eye or that he was rude and boisterous while waiting for his turn at the desk. These criticisms have some weight with the employing office later on.

If an applicant appears to be patently impossible as a messenger, he is rejected at this stage, thus saving time both for him and for the company. Such refusals which are relatively few are usually the result of some extreme physical deformity or unusual incivility during the interview. Boys under the legal age also constitute a considerable number of the rejected applicants.

Interview by Selector

When approved by the initial interviewer, the candidate is ushered into an adjoining room where he has a talk with one of the two employment selectors. The interviewer has the applica-

tion of the boy before him and he seeks by question to secure additional pertinent information. There is no standardized system of procedure but the selectors usually question in some detail about education and previous experience and follow up any clues which seem to be promising.

Rating of Candidate

If a boy is hired, he is rated A, A-, B or B-, according to how high he ranks as good messenger material in the selector's estimation. The rating is a subjective evaluation of the general quality of the boy. It is based upon such items as: appearance, attitude, education, intelligence, manners, residence, physical condition, type in general and previous employment record. No attempt has been made to weight these items nor to define these terms scientifically.

The relations between this subjective rating and various criteria of success as a messenger may be found in Chapters VI and VII.

Applicants, who are rejected, are refused on the basis of some inadequacy in one or more of the items listed above. Usually two or more causes for rejection are written on the application blank.

Reasons for Rejection

To determine the frequency of the reasons for rejection, a study was made of 500 reasons selected at random from the files of those who were refused work.

TABLE IX

Frequency of Reasons for Rejection of Messenger Applicants Given by Employment Selector

Reason for Rejection	*Number*	*Per Cent*
Poor messenger type	150	30
Previous employment record	120	24
Poor appearance	62	12
Physical condition	47	9
Low intelligence	39	8
Lack of education	28	5
Did not wait for interview	23	5
Bad attitude	9	2
Lives in bad locality	8	2
Poor manners	8	2
Age	6	1
	500	100

*(When an applicant was rejected for more than one reason, all the reasons for rejection were tabulated.)

The reason most frequently found is "poor messenger type." The investigator was unable to find the exact meaning of this term. Apparently it includes all the other items plus any vague cause of rejection not specifically mentioned. "Previous employment record" which ranks second, is a more tangible reason for turning away an applicant. If a boy can not give a satisfactory account of how he has been gainfully employed since leaving school, he is seldom hired. The closely related items, " poor appearance" and "physical condition", together total 21 per cent of the reasons for rejection. Contrary to what some people think, the Western Union is not a refuge for cripples. Some of the veteran carriers are retained despite some physical deformity, but all new applicants must measure up to the same standard of appearance required by any first class business house.

Low intelligence and insufficient education are specifically listed in only 13 per cent of the causes for rejection. In all probability, these factors are implied in "poor messenger type." Recently the employment selectors have emphasized these items and in many cases have given intelligence tests to doubtful candidates. The author is of the opinion that at the present time more boys are rejected on this score.

Summary

All messengers in the Metropolitan Division are hired at the local employment department. The employment selectors on the basis of the application blank and the personal interview decide whether or not they will hire an applicant. All full-time day boys are rated as to general desirability as messengers.

A study of rejected applicants showed that the causes of rejection are as follows: "poor messenger type"—30%, "previous employment record"—24%, "poor appearance and physical condition"—21%, "low intelligence and insufficient education"—13%.

PART II

RELATION BETWEEN CRITERIA OF SUCCESS AS A MESSENGER AND FACTORS AFFECTING THIS PERIOD OF SERVICE

CHAPTER V

CRITERIA OF SUCCESS AS A MESSENGER

Necessity of Valid Criteria

Before the personnel of the messenger force can be improved, it is necessary to know what is a good messenger. To determine this one must have reliable measures of a carrier's success or failure. Such measures are called criteria. To obtain reliable measures of a worker's ability is one of the perennial difficulties of personnel investigations. There are usually two major problems encountered in attempting to gauge the efficiency of a worker: (1) lack of adequate objective measures and (2) the proper weighting of the acceptable criteria.

Frequently it is almost impossible to secure objective measures of an employee's efficiency which can be stated in quantitative terms. Success is often such a vague intangible quality that it does not readily lend itself to objective measurement. In lieu of more reliable measures, recourse is then had to subjective estimates and opinions. Such ratings are doubtlessly of value in roughly defining a worker's success but they must be used with a great deal of caution. The value of a rating depends upon how highly we value the opinion of the one doing the rating.

Weighting of Criteria

Even when we have several acceptable criteria, we still face the perplexing problem of properly weighting these measures. Seldom, if ever, may we take only one criterion as a measuring stick for determining the worker's success. Bingham and Freyd have

listed 13 possible criteria: time required to train the employee, standing in the corporation school, quantity and quality of output, performance on standardized tests, accidents and losses, salary, commissions and bonuses, length of service, advancement in firm, degrees of responsibility, membership in professional societies, trade status, and ratings. (Bingham, W. and Freyd, M. *Procedures in Employment Psychology.*)

Usually at least several of these measures are required. How shall these be weighted? Shall they all be considered of equal importance?

Such are the problems that arise in attempting to measure a messenger's success.

Length of Service

May length of service be used as one criterion of a messenger's desirability? To some extent, yes; but surely an indefinite length of service is not desired.

Obviously, since the job of messenger is but a juvenile occupation, an optimum length of employment must be defined. What then shall be the upper and lower limits of this period? At the time of this investigation, the personnel management was undecided concerning this question. It was inclined, however, to consider a length of service of less than three months as unsatisfactory and a length of much more than one year as questionable. Three months was considered a desirable minimum because the personnel department was of the opinion that a carrier should work that length of time to repay the company for the cost of training him—an expenditure of at least $6.50. (See Chapter II.) This limit was tentatively established without the expectation of having all boys remain that long in the service. It was set up as a theoretically desirable minimum period of service. "Not much more than one year" was favored as a desirable maximum length of service for most carriers on the assumption that the boy who is willing to remain in messenger work for years is likely to be lacking in ambition and incapable of giving a high quality of service.

A duration of service falling within these *optimum* limits may, therefore, be taken as one criterion of success as a messenger. A boy may possess a brilliant mind and an attractive personality and

yet, if he drops out after one week of service, be considered a poor messenger. Conversely, a carrier who stays with the company for six months is a good messenger from point of view of length of employment, regardless of the quality of that service. From a practical point of view, both quality and length of service must be considered in evaluating a messenger's success.

Quality of Service

What is meant by high quality of service as a messenger? The author has found this term practically incapable of analysis. What is satisfactory service in a rather slow office in the residential section of town may be an unsuitable standard in a bustling office in the downtown business center. What one manager in a certain district considers good service may be regarded as quite inferior by another manager in the same district who has a different conception of the ideal messenger.

Unfortunately quality of service can not be measured directly but can only be roughly approximated by the use of such criteria as ratings, earnings and discharges.

Ratings

Lacking more objective measures of quality of messenger service, some reliance was placed on estimates made by the branch managers. The investigator did this, however, cognizant of the inherent dangers. Even if a manager is able to rate his boys, it is practically impossible to compare ratings from office to office. A carrier who may be the pride of an office, consisting of four or five boys, may be classed as very mediocre in a large office with a superior group of messengers. Judiciously used, however, ratings have some value in indicating relative success or failure.

Earnings

Since most messengers work on a piece rate basis, earnings give some insight into a carrier's ability. Not all messengers have an equal opportunity in this respect, however, as often the older boys have the early morning delivery routes and consequently make more money. Night letters are delivered in large numbers early in the morning by messengers who receive extra pay

for this work. Then too, there is a considerable difference in the average earnings of the various offices in spite of any adjustments which the company may make.

It must also be taken into consideration that the carrier who delivers the most telegrams is not necessarily the better messenger. Courtesy, honesty and ability to pick up business for the company count as well as speed of delivery.

Discharges

Messengers who are discharged from the company undoubtedly represent a group whose period of service has been unsatisfactory. In isolating this group for intensive study, care must be exercised that only those who are really discharged, are included. The 15 per cent of released messengers who are dropped for absence should not be placed in this category.

Summary

Before one can determine the relationship between quality of service and factors affecting this service, it is necessary to know what is a good messenger. This can be determined only by the use of measures of success or failure called criteria. There are two major difficulties encountered in attempting to gauge the efficiency of a worker: (1) lack of adequate objective measures and (2) the proper weighting of these criteria.

The investigator has selected four criteria of success as a messenger: (1) length of service, (2) ratings by the managers, (3) earnings and (4) discharges. The use of any of these measures involves many dangers, but if judiciously used, should furnish information of value to those responsible for the selection of messengers.

CHAPTER VI

RELATION BETWEEN LENGTH OF EMPLOYMENT AND FACTORS AFFECTING THIS PERIOD OF SERVICE

Length of Service, One Criterion of Success

As was said in Chapter V, optimum length of service may well be taken as one criterion of a boy's success as a messenger. A study of the length of service of messengers released by the company between September, 1928 and February, 1929, revealed that 75 per cent of all messengers leaving the employ of the Western Union had served less than three months and that 50 per cent had been employed less than a month. Since the personnel department has tentatively defined its desirable minimum length of employment as three months, it may be concluded that three-fourths of the carriers released have given a period of service unsatisfactory in length.

In an attempt to discover factors which differentiate between the boy who gives a satisfactory length of employment and the boy who resigns shortly after being hired, a series of studies were made of the relation between duration of service and various obtainable factors affecting this period of employment. Since the company was primarily interested in the full-time day boy who constitutes 59 per cent of the force, most of these investigations deal only with this group.

Nationality

When a messenger is hired by the Western Union, he is asked to state his nationality origin. Those whose parents were born in the United States usually call themselves Americans. In order to determine the relation between nationality and length of service, three investigations were conducted: (1) Per cent of each nationality group found among messengers released after satisfactory and unsatisfactory lengths of employment, (2) average

length of service of various national groups and (3) per cent of each nationality group found among carriers who had been employed for more than one year.

1 *Per Cent of Each Nationality Group Gound Among Messengers Released after Satisfactory and Unsatisfactory Periods of Service.* The application blanks of all full time day boys released during January, February, March, April and May, 1928, were classified according to length of service. Then 300 cases were selected at random from those who had given less than two weeks of employment and compared with 300 boys who had been released after serving from three months to one year. (These two groups were compared on practically all the items appearing on the application blank and will be referred to from time to time).

TABLE X

Nationalities of 300 Full-Time Day Messengers Who Gave a Satisfactory Length of Service and of 300 Carriers Who Served an Undesirable Length of Time

	Number		*Per Cent*		*Dif. in*	*P.E. of*	*Critical*
Nationality	*Sat.*	*Unsat.*	*Sat.*	*Unsat.*	*Per Cent*	*Dif.*	*Ratio*
Hebrew	72	111	.39	.61	.22	.05	4+
American	96	76	.56	.44	.12	.05	2+
Italian	64	65	.50	.50	.00	.07	0
Irish	16	15	.52	.48	.04	.18	0
Polish	18	10	.64	.36	.28	.18	2
German	10	11	.48	.52	.04	.22	0
All Others	24	12	.67	.33	.34	.16	2
	300	300					

The difference between the number of Jewish boys found in each group is quite significant. If the Hebrew boys dropped out of the service at the same rate as the messenger force as a whole, the proportion leaving during the satisfactory and unsatisfactory periods of service should be the same. Instead, we find that 31 per cent of the Hebrew carriers studied in this investigation gave a service of more than three months while 61 per cent dropped out before working two weeks. This difference in per cent, .22 (.05) shows that the Jewish messengers are not as likely to give a desirable length of service as they are to work an unsatisfactory length of time.

The difference between the proportion of American carriers found among the "satisfactory" and "unsatisfactory" groups is not large enough to justify one in concluding that the Americans give a longer service than the average.

The per cent of Italians leaving during each period is exactly the same, which indicates that the service given by this nationality is typical of the force as a whole.

No other national group showed a tendency to vary greatly from the average length of service of the whole messenger force.

2. *Average Length of Service of the Various Nationality Groups.* To obtain some additional light on the relation between nationality and length of service, the investigator computed the average lengths of service of 200 Italian, 200 Jewish and 200 American messengers, released by the company during February, March and April, 1928. In the former study only the extremely unsatisfactory lengths of service and the optimum employment periods were considered. In this investigation, the cases were selected at random from the months listed above, regardless of duration of service.

The average lengths of employment, computed in terms of weeks, was found to be as follows: American 12.03 ($\pm$.72), Italian 9.64 ($\pm$.59), Hebrew 7.90 ($\pm$.52). The difference between the average lengths of service of the Jewish and American carriers is 4.13 ($\pm$.90), which supports the finding of the former study, that the Jewish boys do not give as long a service as the American group. The difference between the service periods of the Italian and American groups is not great enough to be statistically reliable.

3. *Per Cent of Each Nationality Group Found Among Carriers Who Have Been Employed for More Than One Year.* All messengers who have been in the employ of the Western Union for one year are given a vacation with pay. Fifty full-time day messengers were selected at random from the vacation files and their nationalities tabulated. The per cent of each nationality group found among these veteran carriers was then compared with the proportion of each nationality found among all the full time day boys on the force.

Of these 50 messengers who have been in the service for more than one year, 38 per cent are Italian, 26 per cent Jewish, 18 per

cent American, 14 per cent Slavic and four per cent other nationalities. Of the total force of full-time day boys, 23 per cent are Italian, 25 per cent Jewish, 32 per cent American, six per cent Slavic and 14 per cent other nationalities. Evidently the Italians in proportion to their number furnish a large per cent that remains after one year of service. The American group, although comprising 32 per cent of the total enrollment, has a representation of only 18 per cent among the veteran messengers. It should be kept in mind that although this nationality group has relatively few who have given a service of more than one year, it furnishes a large number who have given an optimum period of employment, from three months to a year.

The Hebrews apparently furnish an average number of carriers who give more than twelve months service.

The results of an investigation based on only 50 cases may be considered as but suggestive. Further research is needed along this line.

Age and Length of Service

A study of 300 applicants rejected during January and February, 1929, showed that the older boys were being refused employment. The average age of the rejected candidates was 17.39 years while that of the full-time day boys on the force was 15.78 years. (P. E. of Difference ±.12.)

TABLE XI

Ages of 300 Messengers Who Gave an Unsatisfactory Length of Service and of 300 Carriers Who Served an Undesirable Length of Time

Age	*Satisfactory Group*		*Unsatisfactory Group*
Above 21	0		2
19-21	2		12
18	7		24
17	20	*critical age*	49
16	70		65
15	123		106
14	78		42
Total	300		300
Mean Age	15.71		16.32

From the viewpoint of duration of employment, were the interviews justified in discriminating against the older applicant?

In the study of carriers who gave "satisfactory" and "unsatisfactory" terms of service, described above, it was found that the younger messengers were more likely to give an optimum period of employment.

Of the "satisfactory" group, only 10 per cent were over 16 years of age, while of the "unsatisfactory" messengers, 29 per cent were older than 16. If the employment selectors were to refuse employment to all applicants 17 or over, they would eliminate two boys who would stay less than two weeks to every one who would serve the optimum period.

Average Length of Service of Various Age Levels

The average terms of service given by messengers of various ages was also computed from the application blanks of the 600 Jewish; Italian and American carriers referred to in the study on nationality. These cases were selected at random, regardless of length of employment.

TABLE XII

Mean Lengths of Service of Messengers of Various Age Levels

	Hebrew		Italian		American		Combined Groups	
Age	*No. of Cases*	*Mean Weeks of Service*	*No. of Cases*	*Mean Weeks of Service*	*No. of Cases*	*Mean Weeks of Service*	*No. of Cases*	*Mean Weeks of Service*
14	34	7.52	51	11.14	29	23.82	115	13.32
15	76	7.09	94	9.84	80	10.58	250	9.00
16	49	7.51	29	5.55	42	9.71	120	7.79
17	17	6.41	15	5.60	25	9.76	56	7.68
18	12	9.75	3	8.33	15	4.80	30	7.31
19	5	20.33	4	8.00	3	14.66	12	14.82
20	4	5.25	1	6.00	1	7.00	6	5.73
21	1	1.00	1	88.00	2	3.50	10	4.81
Total...	198	7.86	198	9.64	197	12.03	593	9.61

The 14 year old messengers with an average period of service of 13.32 weeks, give the longest duration of service. The twelve

19 year old carriers surpass them but their number is too small to make the result reliable.

There is little difference in the lengths of employment of the ages over 15. The apparent discrepancy between the results of this study and those of the investigation of the "satisfactory" and "unsatisfactory" groups is explained by the fact that this inquiry considered all gradations of length of service, while the former study took into account only the *decidedly unsatisfactory* and *optimum* terms of employment. Probably a large number of 17 and 18 year old carriers gave several months of service but dropped out before the optimum period was reached.

Age, alone, may not be safely used to predict length of service. With the Jewish boys, age apparently makes little or no difference in regard to length of stay with the company. With the Italians and Americans there is a definite relationship.

Source of Messenger Supply and Length of Service

The Metropolitan Division of the Western Union hires annually about 6,000 messengers. In order to secure such a large number of boys, it is necessary to draw from many sources of supply—advertisements in newspapers, schools and social agencies, former employees, and recommendations made by messengers. With the purpose of determining whether the boys who come from one source of supply give a longer term of service than those who come from another source, a study was made of 500 messengers equally distributed among the five major sources of supply. These cases were selected at random from the carriers hired during a period of five months, July to November, 1928. On April 1, 1929, the lengths of service of these boys were computed and the averages compared. The results may be seen in Table XIII.

The "New York World," although it is the largest source of supply, furnishes messengers who on the average remain with the company fewer days than those from any other source. On the other hand, schools and social agencies, from which the supply is rather small, are sending boys who tend to serve a relatively long period of time. Their average service is three weeks above that of the next highest group, messengers, and is four weeks above the average of the carriers obtained from advertisements in

the "New York World". Obviously social agencies would be a good source of messenger supply to encourage.

TABLE XIII

LENGTH OF SERVICE IN DAYS OF MESSENGERS HEARING OF THEIR POSITIONS FROM VARIOUS SOURCES

Source	*Per Cent of Messengers Referable To a Given Source*	*Mean Length of Service*	*Median Length of Service*	*Per Cent in Service After Four Months*
The "New York World"	37	57.4 ±4.9	29.2 ±6.1	15
Friends or Relatives....	21	63.7 ±4.5	31.9 ±5.9	18
Messengers	20	68.5 ±4.6	46.3 ±5.8	18
Ex-messengers	17	66.9 ±4.7	43.1 ±5.9	13
Social Agencies	5	89.7 ±5.0	73.8 ±6.3	31

In this study, probably the median, since it is less influenced by extreme scores, is a better indication of central tendency than the mean. A comparison of the medians in Table XIII offers equally interesting results. Half of the messengers who heard of their jobs through the "New York World" remain over 29 days, while half of those sent by schools and social agencies remain 74 days or more. The median length of service of those directed to the Western Union by friends and relatives is only one day higher than that of the carriers secured from the "New York World". The ex-messenger shows a tendency to give as long a service as that of any other group with the exception of those who come from social agencies.

At the time of the completion of this study, April 5, 1929, of the 500 messengers studied, there were still 62 in the service, all of whom had worked at least four months. The distribution of this group according to source of supply is as follows: "New York World"—15 per cent. Friends—18 per cent, Messengers—18 per cent, Ex-messengers—13 per cent, and Social Agencies 31 per cent. Social Agencies quite clearly excel in recommending carriers who give desirable minimum periods of service. Surely this is a source of supply that should be cultivated!

THE EX-MESSENGER AND LENGTH OF SERVICE

Table XIII shows that the median length of service of the ex-messenger, 43 days, is practically as high as that of any other

source of supply, barring only Social Agencies. This table also reveals that 17 per cent of all carriers hired over a period of five months had worked for the company previously.

This gives rise to the interesting question as to whether or not the length of service given by a boy during his first employment with the company is indicative of the term he will give, if rehired.

The lengths of service of 50 messengers who had completed their second periods of employment with the Western Union were correlated with their first records by means of the Spearman Rank Formula. The resulting coefficient of correlation was found to be .12 ($\pm$.12). This leads one to conclude that, although the ex-messenger will probably give about as long a duration of service as most carriers, one cannot predict how long he will stay on the basis of his previous record. The boy who worked but one week the first time is just as likely to remain 43 days as the carrier who gave one year's service when first employed.

It should be pointed out, however, that the ex-messengers who are rehired are probably not a random sampling of former carriers in general. Any boy with a bad previous record is not re-employed. The above conclusions regarding the ex-carrier apply only to those who would not be turned away because of their former record.

Previous Employment and Term of Service

The employment selectors were very much interested in whether or not the boys who came to them directly from schools gave more satisfactory durations of service than the applicants who had had previous working experience elsewhere. Some members of the personnel staff were of the opinion that the boys who came to them right from schools were less likely to be of the "floater" type than the workers who had already tried several positions and found none of them to their liking. Others thought that the boys who had already experienced the vicissitudes of juvenile employment in a large city were likely to be more tolerant of the unfavorable phases of messenger work.

To provide factual information on this question, an investigation was made of the durations of service of messengers with previous experience and those who had never worked elsewhere. All carriers released during February, 1929, were included in this study.

TABLE XIV

LENGTH OF SERVICE IN DAYS OF MESSENGERS WITH PREVIOUS EXPERIENCE AND MESSENGERS WITH NO PREVIOUS EXPERIENCE

	Number of Cases	*Mean Length of Service*	*Median Length of Service*	Q_1	Q_3
Group with Previous Experience	232	63.85	23	12	60
Group with no Previous Experience	116	55.00	21	10	60

From Table XIV we can see that the proportion of released messengers with previous experience to those with no former record, is two to one. Only one out of every three messengers is a school boy.

There apparently is little or no difference between the lengths of service of these two groups. What differences do appear are smaller than the probable errors of the differences. From the viewpoint of satisfactory length of stay with the company, the employment selectors are justified in disregarding the question of previous experience. How former experience may affect quality of service is a matter of conjecture.

Again it must be pointed out that these conclusions refer only to that type of messenger with previous experience who is being accepted by the company. Many who have a poor employment record are turned away. If they were all hired, the story might be quite different. However, any candidate who submits an employment record acceptable under present standards may be expected to remain with the company as long as any school boy of the accepted type.

EMPLOYMENT SELECTORS' RATINGS AND LENGTH OF SERVICE

All full-time day boys employed by the Western Union are given a rating by the employment selector. This rating, a subjective estimate of the boy's general quality, is based upon the following items: intelligence, appearance, education, manners, attitude, previous employment record, locality of residence, physical condition and type in general. The relative weight of each of these items cannot definitely be stated by the interviewers. Previous employment record and poor type predominate among the causes for rejection. (See Table IX.)

To determine the relation between the employment selector's ratings and length of employment, a study was made of the messengers released during January, February, March, April and May, 1928. This investigation was approached from two angles: (1) a comparison of the average lengths of service of the carriers in the five classes of ratings and (2) a comparison of the average ratings of 300 boys who had given an optimum period of service and 300 carriers who had served an undesirable period of time. As in the study on nationality and length of service, optimum length of employment was defined as three months to one year and unsatisfactory service as less than two weeks.

TABLE XV

LENGTHS OF SERVICE IN WEEKS OF MESSENGERS CLASSIFIED ACCORDING TO EMPLOYMENT SELECTOR'S RATINGS

	Boys Receiving Rating		*Length of Service*			
Rating	*Number*	*Per Cent*	*Mean*	*Median*	*Q*	*Q*
A	5	1	29.21	5.50	3.25	17.75
A—	35	7	13.83	11.72	3.37	15.67
B+	335	66	7.89	4.50	1.68	10.46
B	130	25	16.92	15.59	7.10	22.79
B—	8	1	30.54	26.00	23.00	36.00

The above table shows that the employment selector's ratings do not follow the normal curve of distribution. Ninety-one per cent of the released carriers have been rated either B+ or B, seven per cent A— and only one per cent A and B— respectively. Since A and A— ratings indicate relative superiority as messenger material, it appears that the employment selectors are not receiving applications from as high a type of boys as they would desire.

The relationship between ratings and duration of service, as presented in Table XV, is somewhat complicated. Probably the medians give a better picture of central tendency than the means as they are less influenced by a few long periods of service.

The data in the A and B— categories cannot be considered seriously because of their small reliability due to the fewness of cases. It is interesting to note, however, that the five boys rated A gave a median period of service of only 5.5 weeks while the eight messengers classed as B—, gave a median length of employment of 26.0 weeks. It is unfortunate that not enough cases could

be found under these two ratings to make this comparison reliable. Since B— represents the critical rating below which no boys are hired, it is reasonable to assume that many boys of this type are refused employment. If they were hired, it is possible that they would give quite a satisfactory duration of service. Perhaps this gain in length of service, if such should be the case, would be achieved at too great a cost in quality of service. This at the present time is but a matter of opinion.

The median and average lengths of service of the B+ boys who constitute 66 per cent of the total number, are relatively low. This is in keeping with the data regarding the average length of service of the Western Union messenger as presented in Chapter I.

The B carriers, however, give a comparatively long term of service, 15.6 weeks as a median and 16.9 as a mean. During both the months of April and May the average length of employment of this group excelled that of the B+ boys: April—16.9 weeks vs. 7.6 weeks and May—16.9 weeks vs. 7.9 weeks. If length of service is to be emphasized as a criterion of a messenger's success, the question of whether or not more B boys should be employed is one for serious consideration.

It is interesting to note that the A— messengers have a higher mean and median service than the B+ boys. The low reliability of this measure causes this relationship to be considered as merely suggestive.

TABLE XVI

EMPLOYMENT SELECTOR'S RATINGS OF MESSENGERS GIVING SATISFACTORY AND UNSATISFACTORY LENGTHS OF SERVICE

	Satisfactory		*Unsatisfactory*	
Ratings	*Weight of Ratings*	*Number of Cases*	*Weight of Ratings*	*Number of Cases*
A	5	2	5	4
A—	4	21	4	21
B+	3	94	3	208
B	2	161	2	67
B—	1	22	1	0
	Av. Rating	2.40	Av. Rating	2.87
	Difference of Means	.47		
	P.E. of Difference	±.04		

This table shows that there is a negative relationship existing between the employment selectors' ratings of the boys and the boys' stay with the company. In other words, the higher a boy's rating, the more likely is he to drop our before giving two weeks of service.

The difference between the average ratings of the "satisfactory" and "unsatisfactory" groups is .50 (±.04). Such a difference can be accounted for only by the fact that the carriers with high rating, the more likely is he to drop out before giving two weeks

Number of Dependents and Length of Service

All applicants are required to state on their application blanks the number of persons partly or wholly dependent upon them for support. To determine whether or not these factors have any relation to length of employment as a messenger, the average number of dependents of carriers giving "satisfactory" and "unsatisfactory" periods of service were compared. These data were obtained from the cases already described under nationality, age and ratings.

TABLE XVII

Number of Dependents and Length of Service

	Partly Dependent (*Number*)	*Wholly Dependent* (*Number*)
Messengers Giving Optimum Length of Service	1.89	2.73
Messengers Giving Unsatisfactory Length of Service	1.13	3.26
Difference of Means	.76	.53
P.E. of Difference	.08	.22

All of the 600 messengers studied claimed to have someone partly or wholly dependent upon them for support. One hundred and twenty-nine boys stated that they had some one wholly dependent upon their earnings while 471 said that they partly supported at least one person.

We are justified in concluding from Table XVII that the messenger with more people partly dependent upon him for support is more likely to give an optimum period of service. The difference between the number of dependents of the "satisfactory"

and "unsatisfactory" groups is nine times the probable error of that difference, and may, therefore, be considered quite significant.

The difference between the two groups in regard to the number wholly dependent upon their wages, is not as striking. Those giving an "unsatisfactory" length of service, however, show a tendency to have more dependents.

Possible, the boy who has several persons partly dependent upon him for support finds messenger work a satisfactory means of making some contribution to the family purse and, therefore, stays in the service, while the boy who must bear the burden of full support, drops out before reaching the optimum period of service, because he does not find the pay sufficient to meet his heavy obligation.

Club Membership and Length of Employment

No reliable difference was found in comparing the number of club memberships of boys who gave a "satisfactory" period of service and messengers who dropped out before working two weeks. Fifteen per cent of the carriers who gave optimum periods of service belonged to the Boy Scouts or some other boys' organization, while 21 per cent of the messengers who served "undesirable" periods of time belonged to some such organization. (P. E. of Difference ± 2.10.)

Family Status of Messengers

Ninety-two per cent of the boys studied in the above investigation, lived with their parents. The proportion from each group was the same. Seven per cent of each group lived with a relative and only one per cent roomed alone.

Grade in School and Length of Service

The employment selectors regard the educational status of the applicant as quite important. When the number of boys seeking positions is large, only eighth grade graduates are employed, but when the supply is small, the "bars are put down" and seventh and even sixth grade applicants are hired. This procedure is based upon the assumption that the boy who has more education will give a better quality of service as a messenger.

Discrimination Against Boys of Less Education

A study of 300 rejected applicants showed that their average number of school years passed was 8.05 as compared with 8.48 years for the full-time day carriers then in the service. In other words, the average grade passed by the rejected boys was 8B, compared with 9A for the full-time day messengers. This difference in means, .43 years ($\pm$.03) is significant.

Only 11 per cent of the full-time day boys now employed are not eighth grade graduates, while 42 per cent of the boys turned away have not passed that grade.

From these data, it is obvious that in spite of occasionally lowering the standard, the employment department rejects a group of boys who have not had as much education as the carriers now on the force. What effect does this have on length of service? Does the boy with more education have a tendency to stay with the company a longer period of time?

Education of "Satisfactory" and "Unsatisfactory" Groups

As in several former investigations described in this chapter, a study was made of the boys who had given an "unsatisfactory" period of service—less than two weeks—and of messengers who had resigned after serving an optimum period of time—three months to one year. A comparison of the educational status of these two groups is shown in Table XVIII.

There is a marked difference between the average education of the carriers who drop out in less than two weeks and the messengers who serve at least three months. The former have a mean education of 8.72 school years, or slightly over 9A grade, while the latter have to their credit only 7.91 years, or a little less than 8B grade. The difference, .81 ($\pm$.07), reveals that the boys with less education are more likely to give an optimum period of service.

Correlation Between Grade in School and Length of Service

To determine the relation between grade in school and length of employment for the large number of carriers who serve less than three months, a correlation was made of these two factors

with nationality held constant. For this study 200 Italian, 200 Jewish and 200 American messengers were selected at random from the carriers released during February, March and April, 1928. All periods of service from one day to three months were represented. When the data were tabulated, it was discovered that some of the boys had served considerably more than three months. These cases were eliminated, leaving 189 Jewish, 184 American and 186 Italian carriers. The coefficients of correlation between lengths of service and grades reached in school were as follows: Hebrews .03 (±.05), Italian —.15 (±.05), American —.16 (±.05.) (Pearson r.)

TABLE XVIII

SCHOOL YEARS PASSED BY MESSENGERS RELEASED AFTER SERVING AN OPTIMUM PERIOD AND THOSE RELEASED AFTER WORKING AN UNSATISFACTORY LENGTH OF TIME

Last School Year Completed	*Satisfactory Group*	*Unsatisfactory Group*
Above 11	0	7
11	8	18
10	11	13
9	20	43
8	76	137
7	134	76
6	45	6
5	3	0
4	2	0
3	1	0
Mean	7.91	8.72
Difference of Means	.81	
P.E. of Difference	±.07	

These correlations show that there is little relationship between education and duration of service for those who work less than the optimum period of time. It is interesting to note, however, that for both the Italians and the Americans, what correlation does exist is negative in character.

Probably the school grade passed has little predictive value as to length of service during the first three months. Table XVIII shows, however, that it is of significance in differentiating between those who drop out during the first two weeks and those who give the optimum period of service.

Intelligence and Length of Service

What relationship exists between intelligence and length of service as a Western Union messenger? This question is one of vital importance to the company. Is it losing the intelligent workers or the ones with less mental ability?

To secure factual information on this question, the investigator computed the lengths of service of 200 full-time day boys who had taken the Otis Self Administering Test of Intelligence (Intermediate) shortly after being hired. The correlation (Pearson r) between Otis score and length of service was then calculated for the 122 messengers who had dropped out during the first three months of service. The resulting r was found to .44 ($\pm$.04), which indicated that there is a slight tendency for those with higher mental ages to give a longer period of service.

Seventy-eight of the 200 messengers were still in the service after working more than three months. All of these carriers had already given a length of employment that was satisfactory to the Personnel Manager. A comparison of the Otis scores of this group with those of the messengers released before giving three months of service, revealed no significant differences. The mean Otis score of the carriers who gave an optimum period of service was 45.50; that of the messengers who dropped out soon after being employed was 43.55. Evidently the mental age of the boy hired by the personnel department gives little indication of how long he will stay with the company. The Binet mental ages of the 200 boys ranged from eight years, two months to sixteen years, eight months, with an average mental age of 12 years, 10 months.

Intelligence of Messengers

Since the average chronological age of the boys was approximately 15 years, the above data seemed to suggest that the average intelligence of the full-time day messenger was not as high as that of the population at large. In order to check on this assumption, a study was made of the intelligence quotients of all the full-time day males under 18 years of age who were hired during the months of March and April, 1929. The inquiry was limited to boys 17 or younger, because they had to attend continuation school and were available for testing.

TABLE XIX

INTELLIGENCE QUOTIENTS OF MESSENGERS UNDER 18 YEARS EMPLOYED DURING MARCH AND APRIL, 1929

Intelligence Quotients		*March*	*April*
110 - 120	Superior	11	37
100 - 110	Normal	50	50
90 - 100	Normal	58	67
80 - 90	Dull	58	34
70 - 80	Borderline	32	36
60 - 70	Moron	12	11
50 - 60	Moron	2	1
Total Number Tested		223	236
Mean Intelligence Quotient		90.78	94.24
S.D.		13.73	14.49

The mean intelligence quotients of the March boys proved to be 90.78 while that of the April recruits was 94.23. This difference, 3.45 ($\pm$1.32) may be due to chance or may be explained by the fact that early in April, the employment selector began to experiment with a disguised intelligence test. Also at the end of March, a certificating officer was established in the employment department so that the applicants no longer had to be sent some distance for their working papers. Possibly this exerted a selective influence as previously many boys sent for their papers never returned.

During both March and April, the average intelligence of the messengers employed was somewhat below that of school children in general. Approximately 50 per cent of the carriers may properly be classed as normal, neither above nor below average intelligence. Only five per cent of the March recruits and eleven per cent of the April number may be called superior in intelligence.

SUMMARY

In an attempt to discover factors which differentiate the messenger who gives an optimum period of service from the one who resigns soon after employment, a series of studies were made of the relation between length of service and various obtainable factors affecting this period of employment.

Nationality

The average lengths of service of the three large national groups are as follows: Hebrews 7.90 weeks—Americans 12.03 weeks—Italians 9.64 weeks. The Jewish messengers furnish a large proportion of the carriers who drop out before giving two weeks of service. The Italians constitute an undue proportion of those who have served more than one year.

Age

The average age of the rejected applicant is 1.61 years (±.12) higher than that of the full-time day force. Investigations indicate that the employment department is justified in favoring the younger boy. To refuse employment to all candidates over 16 would eliminate two boys with unsatisfactory lengths of service to every one with an optimum period of employment. The 14 year old American and Italian messengers give a relatively long length of service, but with the Hebrews, age apparently has little relationship to duration of employment.

Source of Supply

Messengers are secured from the following sources: advertisements in the "New York World"—37 per cent, friends—21 per cent, messengers—20 per cent, ex-messengers—17 per cent, and social agencies—5 per cent. Carriers who come from schools and social agencies serve on the average, three weeks longer than any other group.

Ex-Messengers. The ex-messenger is likely to give as long a period of service, if rehired, as any other group, with the exception of those coming from social agencies. The length of employment he gives the first time, however, is not indicative of the term he will serve when reemployed. The correlation, p, is only .12 (±.12.)

Previous Experience. Two-thirds of the boys hired by the Western Union have had previous working experience. There is no difference between the lengths of service of the boys previously employed and those coming from school.

Ratings. The boys who are given a high rating by the employment selectors are not as likely to give an optimum period of service as the ones of estimated inferior quality. Both the B and A— boys stay longer than the large B+ group, which constitutes 66 per cent of the force. The few B— messengers giev an unusually long period of service.

Dependents. There is a positive relationship between the number of people partly dependent upon a messenger for support and his length of service with the company. However, the carrier with many people wholly dependent upon him for financial assistance is not as likely to give an optimum period of service as the one with few dependents.

Grade in School. The average grade of the rejected applicant is .43 years (±.03) less than that of the full-time day messenger on the force.

The messengers released after giving an optimum period of service have passed on the average, .81 (±.07) less years of school than those released before serving two weeks.

The correlation between grade in school and duration of service for messengers who have worked less than three months, is negligible.

Intelligence. There is a slight positive relationship between intelligence and length of employment as a Western Union messenger. The correlation between these two factors for those serving less than the optimum period is .44 (±.04). There is practically no difference between the average mental ages of the carriers who drop out during the first three months and those who remain after that time.

The average intelligence of the full-time day recruits, as measured by the Otis test, is somewhat below that of school children in general.

CHAPTER VII

QUALITY OF SERVICE AND VARIOUS FACTORS AFFECTING THE EFFICIENCY OF THE MESSENGER

Quality of Service

Although the Western Union is greatly interested in securing messengers who will stay a reasonable length of time, it is also vitally concerned about selecting boys who will give a high quality of service. Personnel officials have repeatedly made the statement, "Hire a high type of boy who will give the public excellent service, even if he does not stay in our employ very long."

Difficulty of Measuring Quality of Service

As pointed out in Chapter V, it is exceedingly difficult to determine which boys give the superior service. Efficiency as a messenger can only be roughly measured by the use of several criteria. Estimated quality of service is indicative of a boy's success in a particular office, but we have no assurance that this messenger would be equally efficient in another district where conditions might be different. Amount of pay also furnishes some measure of a carrier's ability, since the boys are paid on a piece rate basis. Discharges and reprimand are valuable indices in a negative sense, in that they identify a group whose service has been unsatisfactory.

Keeping in mind the limitations described in Chapter V, the above criteria of quality of service were utilized in selecting groups for intensive study. An attempt was then made to determine what factors, if any, differentiate between the boys who give an excellent quality of service and the carriers who serve in an unsatisfactory manner.

Estimated Quality of Service

The investigator visited twelve of the larger offices of the First and Second Districts and asked the branch managers or the delivery clerks to give him the names of five or six of the best carriers

and five or six of the poorest messengers in the office. The names of all the boys had previously been written on cards so that the rater could look at them and select his workers without the danger of forgetting someone whose name he could not recall. It was emphasized that the rating would be used for research purposes only and would in no way affect the particular messenger.

In this way a group of 57 boys of high quality of service and a group of 60 carriers of estimated low quality were secured. A comparison of the means of these two groups on practically all the items appearing on the application blanks revealed but few significant differences!

Selector's Ratings

The employment selector's ratings of the boys who had never worked before were .42 points higher (±.10) for the "superior" boys than they were for the "inferior" carriers. With the boys who had worked previously, however, the differences in ratings between the two groups was only .09 (±.10). This indicates that the employment interviewer is better able to predict high quality of service for the school boy than he is for the boy who has had previous working experience.

Length of Service

The time that a boy has been in the employ of the company appears to be the most significant item differentiating the "superior" from the "inferior" quality groups. The average length of service of the former is 41.11 weeks and that of the latter, 18.39 weeks. This difference, 21.72 weeks (±3.97) shows that the boy who has been with the company for a longer period is more likely to be classed as the superior messenger. Possibly some selective factors tend to make the more experienced carriers of superior quality or perhaps, experience, itself, raises the carrier's efficiency. *Or it is possible that a rather long period of contact with the messenger has revealed indications of quality unsuspected in the less experienced and less familiar worker.

*(A study of 50 boys who had served as messengers for more than one year showed that they surpassed the average of the total force in school grade passed, grade acceleration and employment selector's ratings. All of these are indices of relative superiority!)

Nationality. It is of interest to note that the per cent of nationalities other than Jewish, Italian and American, is considerably greater among the "superior" messengers than among the "inferior" carriers. The difference in per cent between the two groups is 22 (±.10) which suggests that probably it would be a good policy for the employment selectors to favor nationalities other than the three stated above. At present 80 per cent of the force is composed of Hebrews, Italians and Americans.

Age. The boys of estimated superior quality are .43 of a year (±.18) older than the boys of less messenger ability. This difference, if not due to chance, may be explained by the fact that these boys have been in the service five months longer than the other group.

No other significant differences were discovered between the two groups. Apparently education, previous experience and grade retardation have little relation to estimated quality of messenger service. It was unfortunate that it was impossible to obtain intelligence scores for these boys. Grade retardation as an index of intelligence, revealed no real differences between the boys who gave a high standard of service and those who performed their duties in an unsatisfactory manner.

Nationalities and Ages of Discharged Messengers

A study was made of the ages and nationalities of all the messengers discharged by the company during January, February and March, 1927, with the purpose of determining whether or not certain ages and nationalities predominated among the unsatisfactory workers. The data may be seen in Table XX.

TABLE XX

Nationalities of Discharged Messengers
January, February and March, 1927

	Number	*Per Cent*	*Distribution of Nationalities on Full-Time Day Force (Per Cent)*
Jewish	57	41	23
Italian	34	24	23
Irish	12	10	4
German	5	4	4
All Others	30	21	46
	138	100	100

TABLE XXI

AGES OF DISCHARGED MESSENGERS

January - March, 1927

	Number	*Per Cent*	*Ages of Full-Time Day Force (Per Cent)*
Over 21	14	10	1
18 - 21	10	7	4
17	12	9	5
16	23	17	20
15	48	23	44
14	31	34	26
	138	100	100

In order to decide whether or not any nationality is unduly represented among the discharged carriers, it is necessary to compare that per cent with the per cent of that nationality group on the force. One would naturally expect to find more discharged Italian messengers than Irish since the ratio between the two nationalities in the force is almost six to one.

From Table XX we can see that the Hebrews constitute an undue proportion of the discharged carriers. The difference between the per cent on the force and the per cent among the unsatisfactory workers is 18 (± 2.96). This difference is quite significant. It shows that a larger proportion of Jewish messengers are discharged than of any other nationality. One-third of the Hebrew boys were dismissed for insubordination. Only one-eighth of the other nationality groups were released for this reason.

The Irish also show a tendency to furnish more than their proportionate number of discharged carriers. The proportion is not as great as that of the Hebrews, however.

The Italians and Germans are about average in this respect. Nationalities, other than those stated above, apparently have few discharges. The per cent of other nationalities on the force is 46, while their per cent among the discharged carriers is only 21. The difference in per cent, 15 (± 2.63) shows conclusively that nationality groups, other than Jewish, Irish, Italian and German, are less likely to be dismissed from the service.

Ages of Discharged Messengers

Messengers, 14 years of age and those over 21 furnish a large proportion of the discharged messengers. Table XXI shows that although only one per cent of the total enrollment is over 21 years of age, 10 per cent of the dismissed carriers are above that age. The difference is nine per cent (± 1.72). The 14 year old messengers constitute only 26 per cent of the total force but furnish 34 per cent of the discharged workers. This difference 8 per cent (± 2.80) probably indicates that the extremely young messengers more often become involved in complaints leading to dismissal.

On the other hand, the 15 year old boys are less likely to be discharged. They furnish 44 per cent of the total enrollment but have a representation of only 23 per cent among the discharged carriers. The difference is 21 per cent (± 2.69).

The other age levels furnish their proportionate number of unsatisfactory workers.

Education of Discharged Messengers

The average number of school grades passed by 100 discharged full-time day carriers, selected at random from the 1928 list, was practically the same as that of the force as a whole. The mean grade of the discharged messengers was 8.39, while that of the total force was 8.48. This supports the evidence found in "ESTIMATED QUALITY OF SERVICE" that grade reached in school has little relation to inferior messenger service.

Earnings and Intelligence

Does the more intelligent messenger earn a larger wage? To obtain some light on this question, the investigator computed the earnings of 75 messengers who had taken the Otis Intelligence Test upon entering the service on November 15, 1928. Of these 75 boys, only 40 remained in the service long enough to provide figures covering a period of six weeks. The average hourly earnings of the 40 carriers over a six weeks period correlated .25 ($\pm .10$) with their intelligence scores. A study based upon so few cases is not conclusive but it indicates that intelligence probably has but slight relationship with amount of money earned.

Earnings and Education

The correlation between the last grade passed in school and the average hourly earnings of these 40 boys is .41 (±.08). This suggests that there is probably a small positive relationship between education and amount of money earned.

Earnings and Length of Service

All messengers who have been in the employ of the company for one year are given a week's vacation with pay. This vacation pay is the average of the 10 weeks previous to the vacation. A study of the vacation salaries of 75 messengers showed that their average hourly wage had been 37 cents. Since the company regulates the wage schedule so that the force averages approximately 30 cents an hour, it is evident that the veteran carriers are earning more than the average messengers. To the extent that wages are indicative of a boy's success as a messenger, the veteran carriers may be considered the superior workers.

Summary

Cognizant of the inherent difficulties, the writer made an attempt to discover factors differentiating the successful messenger from the one giving an unsatisfactory quality of service. Success as a messenger was measured by the following criteria: (1) ratings by the branch mangers, (2) dismissal from the service and (3) earnings.

Ratings. With boys who have never worked previously, the employment selector's ratings have a prognostic value with success as estimated by the local managers but have little significance with the more experienced workers. The length of service of the carriers rated as superior by the branch managers is more than double that of the estimated inferior group. No other significant differences have been discovered between the two groups. Apparently such factors as education, grade retardation and previous employment have no relation with quality of messenger service as rated by the local managers.

Discharged Messengers. It was found that the Hebrews constitute an undue proportion of the discharged workers. The dif-

ference between the per cent of Jewish messengers on the force and the per cent among the unsatisfactory workers is 18 (±2.96). Nationalities other than Jewish, Italian, German and Irish furnish a very small proportionate number of discharged messengers.

Carriers over 21 years of age and messengers 14 are more likely to be discharged than any other age levels. The 15 year old boys have a relatively small per cent dismissed as unsatisfactory.

Earnings. The correlation between intelligence and earnings of 40 boys was found to be .25 (±.10). Grade in school and earnings correlated slightly higher, .41 (±.08).

The average hourly earnings of the boy who has been in the service for more than one year is seven cents higher than the average wage of the force.

CHAPTER VIII

SUMMARY AND CONCLUSIONS

Officials of the Western Union Telegraph Company are of the opinion that a personnel program involving more than 15,000 juvenile workers should be based upon all the pertinent facts obtainable. To provide data which will guide the company in the development of its messenger program was the purpose of this study.

I. Length of Service of Western Union Messengers

1. During the decade, 1919—1928, the rate of turnover was almost 400 per cent annually.
2. The monthly turnover in each year follows a definite pattern, with the same high and low spots occurring year after year.
3. Of the messengers who were released over a six months period, 15 per cent had served less than a week; 50 per cent less than a month; 75 per cent less than three months and 95 per cent less than one year.
4. Of the messengers on the force, 19 per cent had served less than one month; 47 per cent less than three months and 78 per cent less than one year.
5. In general more boys applied for work when the volume of business transacted by the company was small.

II. Cost of Messenger Turnover

1. The expense involved in the early withdrawal of 75 per cent of the messengers hired is an economic waste to the boys, the company and the public.
2. The cost of hiring, including advertising and clerical help, amounts to two dollars per messenger.
3. The expenditure involved in issuing the uniform and giving the necessary instructions has been estimated at at least one dollar.

4. The difference between the guaranteed salary of the first week and the boy's actual earnings amounts to $3.50 on the average.
5. During 1928 the total measurable loss caused by the early resignations of carriers was at least $20,000.

III. Reasons for Leaving as Given by Messengers

1. Reasons for leaving as given by messengers are but suggestive of the real causes.
2. At least 50 per cent of the replies are too general to be of value.
3. Dislike for messenger work, with "not enough pay" and "too much walking" as the specific objection predominate among the definite reasons for leaving.
4. Four per cent of the boys are discharged, with insubordination and general undesirability causing most of the releases.

IV. The Present System of Messenger Selection

1. The employment selectors decide on the basis of the application blank and the personal interview whether or not they will hire an applicant.
2. The reasons for rejection are as follows: "Poor messenger type —30%, "previous employment record"—24%, "poor appearance"—21%, and "low intelligence"—13%.

V. Criteria of Success as a Messenger

1. In order to know what constitutes a good messenger, it is necessary to have measures of success or failure called criteria.
2. There are two major difficulties encountered in attempting to gauge the efficiency of a worker: (1) lack of adequate objective measures and (2) the proper weighting of these criteria.
3. The four available criteria of success as a messenger are: (1) length of service, (2) ratings by the managers, (3) earnings, and (4) discharges.

VI. Length of Employment and Factors Affecting This Period of Service

1. The Hebrew boys do not remain with the company as long as those of other nationalities, while the Italians constitute an undue proportion of those who remain longer than one year.
2. The younger Italian and American boys are more likely to give a satisfactory length of service than are the older boys. With the Hebrews, age has little relationship to length of employment.
3. Messengers are secured from the following sources: Advertisements in the "New York World" 37%, friends 21%, ex-messengers 17%, and social agencies 5%. Carriers from social agencies serve on the average three weeks longer than any other group.
4. The ex-messenger is likely to serve as long as a carrier from any other source but his stay the first time is not indicative of the term he will give if re-employed.
5. There is no difference between the length of service of the boy previously employed and the one coming directly from school.
6. The carriers who are given a high rating by the employment selector usually do not give as satisfactory a length of service as the ones of estimated inferior quality.
7. The messenger who has several people partly dependent upon him for support is more likely to give an optimum period of service than the one who has few partly dependent or several wholly dependent.
8. Although the company is rejecting the applicant with less education, he is the type that is more likely to serve an optimum period.
9. There is a slight positive relationship between intelligence and length of employment as a Western Union messenger.
10. The average intelligence of the full-time day recruit is somewhat below that of school children in general.

VII. Quality of Service and Factors Affecting the Efficiency of the Messenger

1. In the case of boys with no previous experience, the employment selector's ratings have some value in predicting success as estimated by the local managers but have little significance with the more experienced workers.
2. The boys who have been in the service for a longer time are usually considered the superior carriers by the branch managers.
3. Age, education, grade retardation and previous working experience have no apparent relation to quality of service as rated by the managers.
4. The Hebrews are more likely to be discharged than the carriers of any other nationality group.
5. Messengers under 15 and over 21 years of age are more likely to be discharged than messengers between 16 and 20 years old.
6. The correlation between intelligence and earnings and the correlation between grade in school and earnings are positive but insignificant.
7. The veteran carriers are the ones who are making the most money.

Conclusions

1. On the basis of the above findings it should be possible for the employment selectors to hire messengers who will give a longer period of service. Giving preference to the younger, non-Jewish boys with an education of ninth grade or less should materially reduce messenger turnover. More contacts with social agencies from whom messengers may be secured should also result in an increased length of service.
2. No information obtainable from the application is indicative of the quality of service a messenger will give. Those who have been in the service six months, however, are considered by the office managers to be the better messengers.
3. The Western Union Company, realizing that the position of messenger is but a juvenile occupation, is desirous of placing

boys, who give a satisfactory term of service, in positions that have more room for advancement. The intelligence range of the messengers indicates, however, that these boys will need a great variety of occupations. Some of the boys can succeed in business houses, but many will be better adjusted in trades or factory work.

4. In view of the extremely short length of service of newly hired workers, it is suggested that the vocational guidance program be of such a nature that the messengers will profit from it even though they remain in the service but a few weeks. Concrete information about the various occupations within their range of attainment will prove very useful. This can be administered through the company school.

5. Since "not enough pay" and "too much walking" are the chief reasons given by the boys for resigning, it is recommended that the personnel department attempt to adjust these matters. Probably a slight upward revision of the wage scale, with a bonus to be paid to all boys who give an optimum period of service, would tend to increase the average length of service. (This is now being put into effect). An educational campaign advising boys how to take proper care of their feet might aid in lessening resignations due to "too much walking".

6. The Western Union Telegraph Company has initiated the progressive and commendable policy of giving vocational guidance to messengers. Continued research is necessary to guide this program throughout its development.

VITA

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